L6(6.3) - Vertex Form by Completing the Square

Recall:

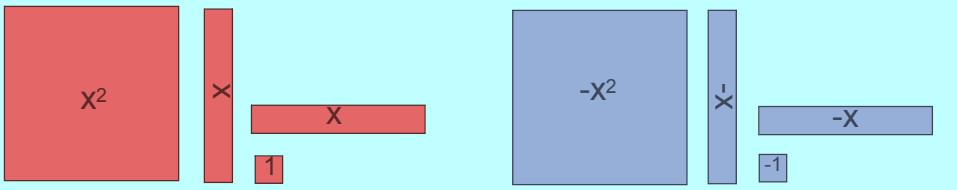
Vertex form: $y = a(x - h)^2 + k$

Note that $(x - h)^2$ is a perfect square.

In general, for perfect square trinomials,

$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$

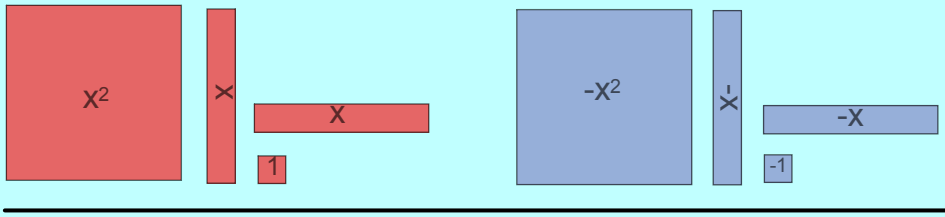
Apr 12-2:42 PM



Identify the missing constant so that the trinomial is a perfect square trinomial, then factor it.

$x^2 + 6x + \_\_\_ = (x \quad)^2$

Mar 25-8:02 AM



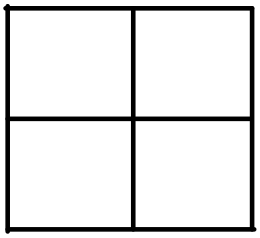
Identify the missing constant so that the trinomial is a perfect square trinomial, then factor it.

$x^2 - 4x + \_\_\_ = (x \quad)^2$

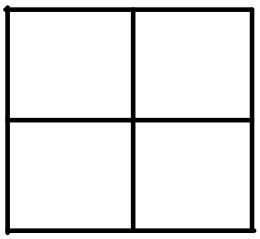
Mar 25-8:02 AM

Ex.1 What is missing from these perfect squares?

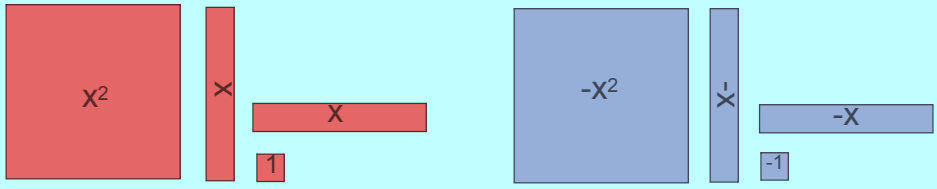
(a) $x^2 + 10x + \_\_\_\_\_ = (x \quad)^2$



(b) $x^2 - 18x + \_\_\_\_\_ = (x \quad)^2$



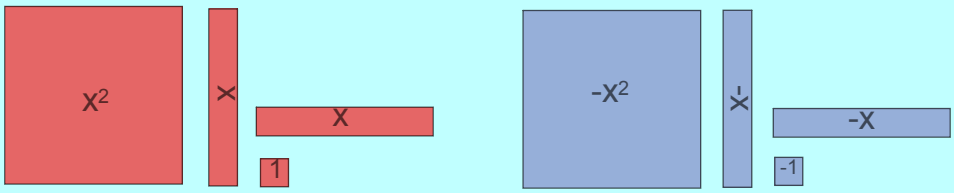
Nov 23-8:41 PM



Identify the missing constant so that the trinomial is a perfect square trinomial. You will have some tiles "left over".

$x^2 + 6x + 3 = (\quad)^2$ _____

Mar 25-8:02 AM



Identify the missing constant so that the trinomial is a perfect square trinomial. You will have some tiles "left over".

$x^2 - 4x - 3 = (\quad)^2$ _____

Mar 25-8:02 AM

Steps:

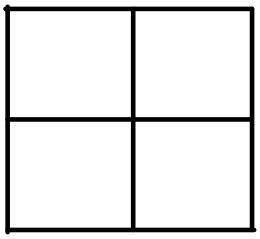
1) Factor out 'a' from the first two terms.

2) Force a perfect square for the factored first two terms.

3) Collect the constants.

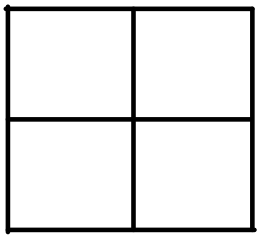
Ex.2 Complete the square for each of the following

a) $y = x^2 + 12x - 7$



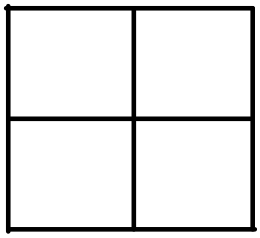
May 3-7:51 PM

b) $y = x^2 - 20x + 15$



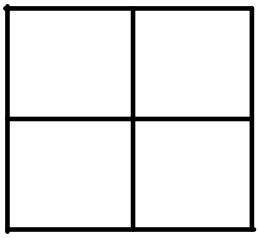
Nov 23-9:00 PM

c) $y = 3x^2 + 12x + 11$



May 4-8:48 AM

d) $y = -x^2 + 6x + 13$



Nov 23-9:00 PM

Assigned Work:

p. 331 # 2ab, 3ab, 5ac, 7ab, 9, 11, 16

Mar 20 - 4:57 PM